Whirlpool



Service Manual

Dishwasher
ADP 971/3 GRM

Model ADP 971/3 GRM
Version 8542 971 38460

This documentation is only intended for qualified technicians who are aware of the respective safety regulations.

Date: 07.09.2000 Subject to modification
Document-No.: 4812 718 14744

Technical data

Dimension

Height	85.0	cm
Width	59.7	cm
Depth	59.6	cm
Weight	56.7	kg

Electronic boards

Service boards	see spare part list
Serial boards	
UB	4619 720 78981
DB	4619 720 78871
CB	096621
Dataset	096611

Succession of programs

Programs	see program diagram
Succession	1a-2a-3b-4b-5a-6b-7a

Alarms

Refill rinse aid
Refill salt

Options

Zone washing
Delay function

Datas Energy Label

Energy Performance	C
Cleaning Performance	B
Drying Performance	B
Reference program	4b

Program information

Start indicator
Pre wash
Main wash
Drying
End

Volume (normal program)

Water	Volume	Level
Regeneration	0.3 l	15 mm
Back rinse 3x	1.0 l	68 mm
Prewash	4.8 l	122 mm
Prewash/Zone washing	4.0 l	120 mm
Main wash	4.5 l	121 mm
Main wash/Zone washing	3.5 l	117 mm
Intermediate rinse 1	4.0 l	120 mm
Intermediate rinse 1/ Zone washing	3.5 l	117 mm
Intermediate rinse 2	4.0 l	120 mm
Intermediate rinse 2/ Zone washing	3.5 l	117 mm
Clear rinse	4.0 l	120 mm
Clear rinse/Zone washing	3.5 l	117 mm
Safety / overflow	8.5 l	141 mm

Measuring the level

Remove the coarse sieve, put in a measuring meter into the sump, measure the hight of the water level.

Detergent max.

Pre-wash	10	cm^3
Main-wash	45	cm^3
Rinse aid	125	cm^3
6 Dosage steps	1 - 6	ml

Water softener

Saltcontainer	2	kg
Resin container	900	cm^3
Regeneration dosage	300	cm^3

Water pressure

Inlet pressure	0.3-10	bar
Spray pump pressure	0.4	bar

Rotations

Spray pump motor	2800	RPM
Drain pump motor	3000	RPM
Spray arm lower	20 - 40	RPM
Spray arm upper	25 - 35	RPM
Ceiling rotor	45 - 65	RPM
Fan for drying	2500	RPM

Technical data

Flow rates / Inlet volume

Flow meter (at 0.3 bar = quantity 1.1 l/min)	208	Imp/l
Spray pump	~ 70	l/min
Drain pump	16	l/min
Pump height max.	1.1	m
Inlet valve	4.5	l/min
Valve for Zone washing	30	l/min
Spray arm lower	33	l/min
Sprayarm upper	27	l/min
Ceiling rotor	10	l/min
Fan for drying:		
Total	900	l/min
Primary air flow	210	l/min
Secondary air flow	780	l/min

Electrical data

Base data

Voltage	220/230	V
Frequency	50	Hz
Total power	2.0-2.2	kW
Fuse	10	A

Motor

Spray pump motor

Voltage	220/230	V
Power consumption	160	W
HI	81	Ω
HA	44	Ω
Capacitor	4	µ F

Drain pump motor

Voltage	220/240	V
Power consumption	30	W
Resistance	146	Ω

Fan for drying

Voltage	220-240	V
Resistance	141	Ω

Heating

1 Element system

Voltage	220/230	V
Power consumption	1.87/2.04	kW
Resistance	24.5	Ω
Heating speed	~ 2.0	˚C/min
Temperature on surface	~ 115	˚C
Safety thermostat self reset	85	˚C

Potentiometer

Points of meassurement:	1(black) to 2 (middle)	
Position 0	0.0	kΩ
Position 1	0.5	kΩ
Position 2	1.0	kΩ
Position 3	1.4	kΩ
Position 4	1.8	kΩ
Position 5	2.3	kΩ
Position 6	2.6	kΩ

Water valves

Single valve at inlet hose

Voltage	220/240	V
Frequency	50/60	Hz
Resistance	3.76	kΩ

Regenerating valve

Voltage	220/240	V
Frequency	50/60	Hz
Resistance	3.13	kΩ

Valve for zone washing

Voltage	220-240	V
Frequency	50/60	Hz
Resistance	4	kΩ

Coil of dispenser

Voltage	220/240	V
Frequency	50/60	Hz
Resistance	1.5	kΩ

Reedcontact

flow meter
salt control
rinse aid control

Technical data

NTC

20 °C	58.1	kΩ
25 °C	47.1	kΩ
30 °C	38.2	kΩ
40 °C	25.4	kΩ
50 °C	17.2	kΩ
60 °C	11.8	kΩ
70 °C	8.3	kΩ
80 °C	6	kΩ
85 °C	4	kΩ

Regeneration

Volume	300	cm^3
Position 0		
after wash cycles	10	
water hardness	0-5	°dh
	0-0.9	mmol/l
	0-9	°Fh
Position 1		
after wash cycles	8	
water hardness	6-10	°dh
	1-1.8	mmol/l
	10-18	°Fh
Position 2		
after wash cycles	6	
water hardness	11-15	°dh
	1.9-2.7	mmol/l
	19-27	°Fh
Position 3		
after wash cycles	4	
water hardness	16-21	°dh
	2.8-3.7	mmol/l
	28.37	°Fh
Position 4		
after wash cycles	3	
water hardness	22-28	°dh
	3.8-5.0	mmol/l
	38-50	°Fh
Position 5		
after wash cycles	2	
water hardness	29-35	°dh
	5.1-6.3	mmol/l
	51-63	°Fh
Position 6		
after wash cycles	1	
water hardness	36-60	°dh
	6.4-10.7	mmol/l
	64-107	°Fh
Salt consumption for regeneration	77	g
Number of cycles with 2 kg salt	26	

Accesory

If you need spare parts apart from the spare part list have a look in the Service Bulletin 4812 718 40084.

Spare part list

Model **ADP 971/3 GRM**
Service No. **854297138460**
Version **854297138460**

Pos. No.	12NC Code	Description
003 0	**4812 440 19382**	Traverse
004 0	**4812 440 18952**	Drip tray assy
004 1	**4812 401 18402**	Holder
011 0	**4812 505 18357**	Foot short
022 0	**4812 440 19525**	Side panel left SILV
022 1	**4812 440 19524**	Side panel right SILVER
022 2	**4812 440 18953**	Spacer
024 0	**4812 440 19463**	Panel, rear
030 0	**4812 310 18462**	Table top SIVBER
034 0	**4812 404 78237**	Spacer
034 1	**4812 404 78247**	Fastener table top SILV
040 1	**4812 417 18774**	Hinge left
040 2	**4812 417 18773**	Hinge right
040 3	**4812 417 18851**	Protector f.door (set) GRAU
044 0	**4812 492 38358**	Spring f.door
044 1	**4812 492 38364**	Spring f.cap
047 0	**4812 404 48591**	Brake f.door
047 1	**4812 401 18397**	Band,brake
047 2	**4812 404 68023**	Hook
053 0	**4812 440 88903**	Plinth SILV
053 4	**4812 440 88902**	Plinth rounded SILV
103 0	**4812 440 19523**	Door outer SILV
120 0	**4812 440 19456**	Door,inner
120 1	**4812 440 18969**	Batten
130 0	**4812 417 58361**	Tilt lock
131 0	**4812 401 18416**	Hook lock
191 0	**4812 466 68564**	Gasket door
192 0	**4812 466 68467**	Gasket, door lower
241 0	**4812 458 18912**	Basket upper straight
241 1	**4812 458 18324**	Holder cups right white
241 2	**4812 535 78036**	Bearing
241 3	**4812 528 88068**	Wheel,basket upper (set)
241 4	**4812 458 18288**	Cutlerycompart. WH
241 5	**4812 458 18921**	Holder cutlery basket
241 6	**4812 458 18333**	Holder glasses
241 7	**4812 404 48639**	Hoop
241 8	**4812 466 68553**	Spacer cap set
242 0	**4812 458 18923**	Basket lower cpl.
242 1	**4812 528 88069**	Wheel,basket lower
242 2	**4812 458 18262**	Plate,support f.basket lower
242 3	**4812 458 18275**	Plate,support f.basket lower
242 4	**4812 466 48059**	Fixation
243 0	**4812 458 18272**	Basket cutlery
243 4	**4812 458 18317**	Bracket
261 0	**4819 462 38271**	Rail telescope, inner
261 1	**4819 404 48819**	Cap rail
261 2	**4812 462 78995**	Cap rail ahead
263 0	**4819 520 18013**	Ball cage cpl.
263 1	**4812 520 48001**	Ball Niro 8 D
265 0	**4812 404 48637**	Basket adjustm. cpl.
265 2	**4812 404 48638**	Grip basket adjustment
301 0	**4812 453 70347**	Control panel SILV
303 1	**4812 460 38059**	Plate,handle SILV
305 0	**4812 440 19522**	Batten SILV
322 0	**4812 453 70346**	Insert panel SILV to 99/07

Pos. No.	12NC Code	Description
322 0	**4812 453 70372**	Insert panel SILV from 99/07
322 1	**4812 440 19468**	Sticker Multizone blue
331 0	**4812 413 58952**	Knob program cpl. SILV
332 0	**4812 410 28591**	Push button cap GR
350 0	**4812 276 58073**	Display board (DB)
400 0	**4812 361 58126**	Motor + spraypump cpl.
405 0	**4812 360 18371**	Spray pump
405 1	**4819 515 28158**	Gasket
420 0	**4812 121 18132**	Capacitor
421 0	**4812 121 18161**	Interf.filter
430 0	**4812 360 18357**	Pump,draining
430 1	**4812 466 68506**	Shaft seal
442 0	**4812 361 18196**	Blower cpl.
450 0	**4812 259 28684**	Heating element
480 0	**4812 321 28386**	Cable harness set
480 1	**4812 321 28371**	Cable
480 2	**4812 321 28383**	Cable 6poles
480 3	**4812 401 18418**	Protector f.wiring
490 0	**4819 321 18136**	Cable,mains 2m
490 1	**4812 321 28367**	Strain relief
521 0	**4812 214 78236**	Control board (CB)
531 0	**4812 273 18055**	Switch waterhardness
531 1	**4812 273 18056**	Wheel,fingertip
571 3	**4812 281 28363**	Valve f.zone-washing
575 0	**4812 281 28361**	Regen.valve
583 0	**4812 271 28355**	Switch diaphragm
616 0	**4812 281 18047**	Contact,reed salt
616 1	**4812 271 58161**	Contact,reed rinsing agent
620 0	**4812 218 38058**	User board (UB)
623 0	**4812 271 38356**	Microswitch
633 0	**4812 271 38355**	Microswitch door
680 0	**4812 418 68155**	Combidosage
680 1	**4812 466 68495**	Gasket
681 1	**4812 466 68497**	Gasket
681 2	**4812 440 18975**	Flap
682 0	**4812 466 68496**	Gasket
691 0	**4812 282 68012**	Feeler NTC
700 0	**4812 530 28804**	Hose, inlet aqua stop 4,2m
700 0	**4812 530 28848**	Hose, inlet aqua stop 2m
700 1	**4812 480 48019**	Sieve
700 2	**4812 520 58002**	Gasket set
701 1	**4812 310 18153**	Yoke clamp set
710 0	**4812 418 68128**	Monoblock
710 2	**4819 310 38536**	Threaded ring
710 3	**4819 466 69562**	Gasket set
714 0	**4812 462 78993**	Threaded cap
714 2	**4812 440 18963**	Cabinet non-return flap
716 0	**4812 418 68147**	Reg.dosage
716 1	**4812 466 68475**	Gasket
716 2	**4812 462 78994**	Cover
721 1	**4812 360 68061**	Spray arm lower. cpl.
721 2	**4812 466 68491**	Gasket 25x2,3B
721 3	**4812 466 68558**	Gasket 30x3,0
721 4	**4812 440 19455**	Flange
722 0	**4812 360 68044**	Spray arm upper

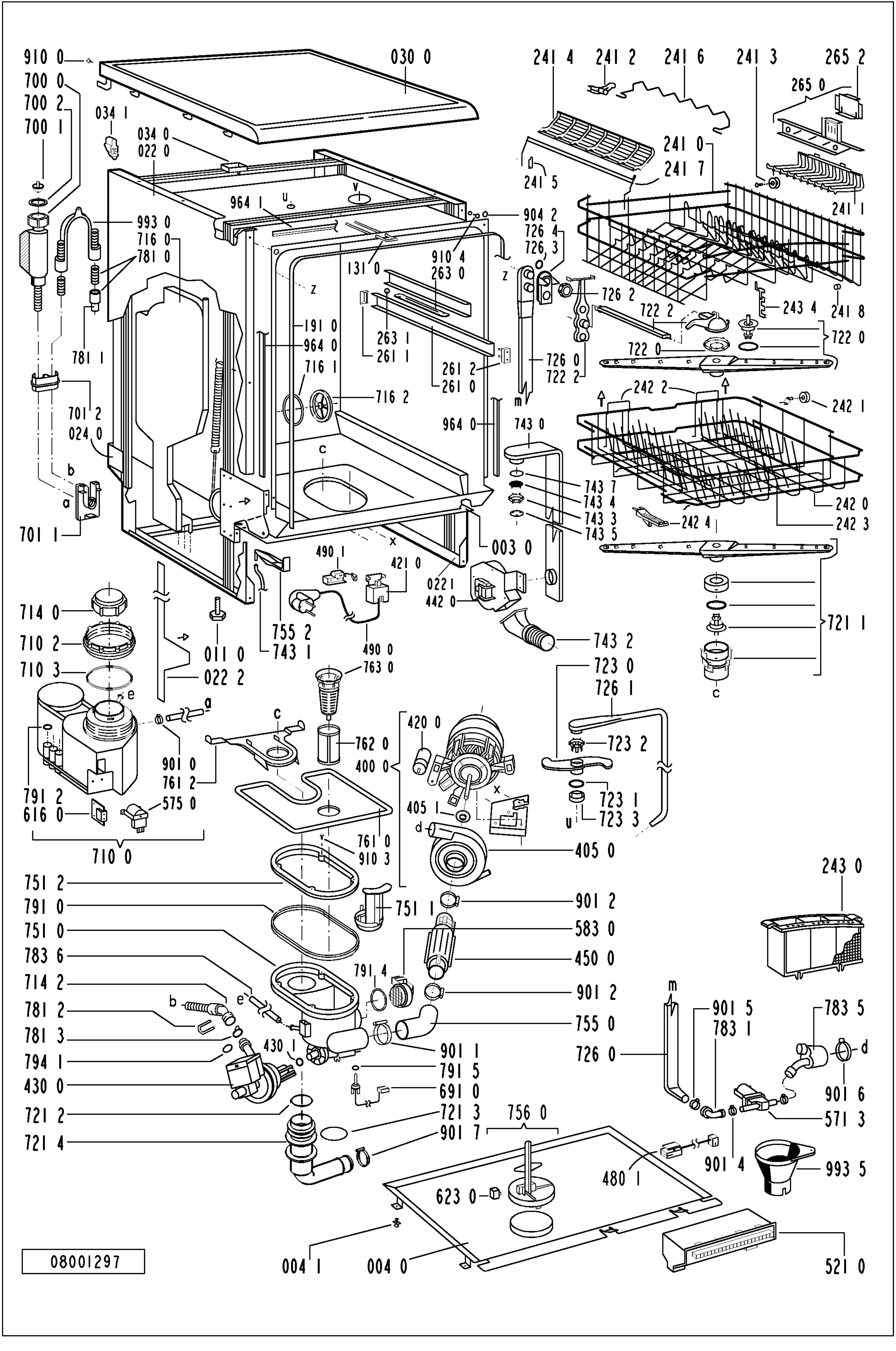
Spare part list

Model ADP 971/3 GRM
Service No. 854297138460
Version 854297138460

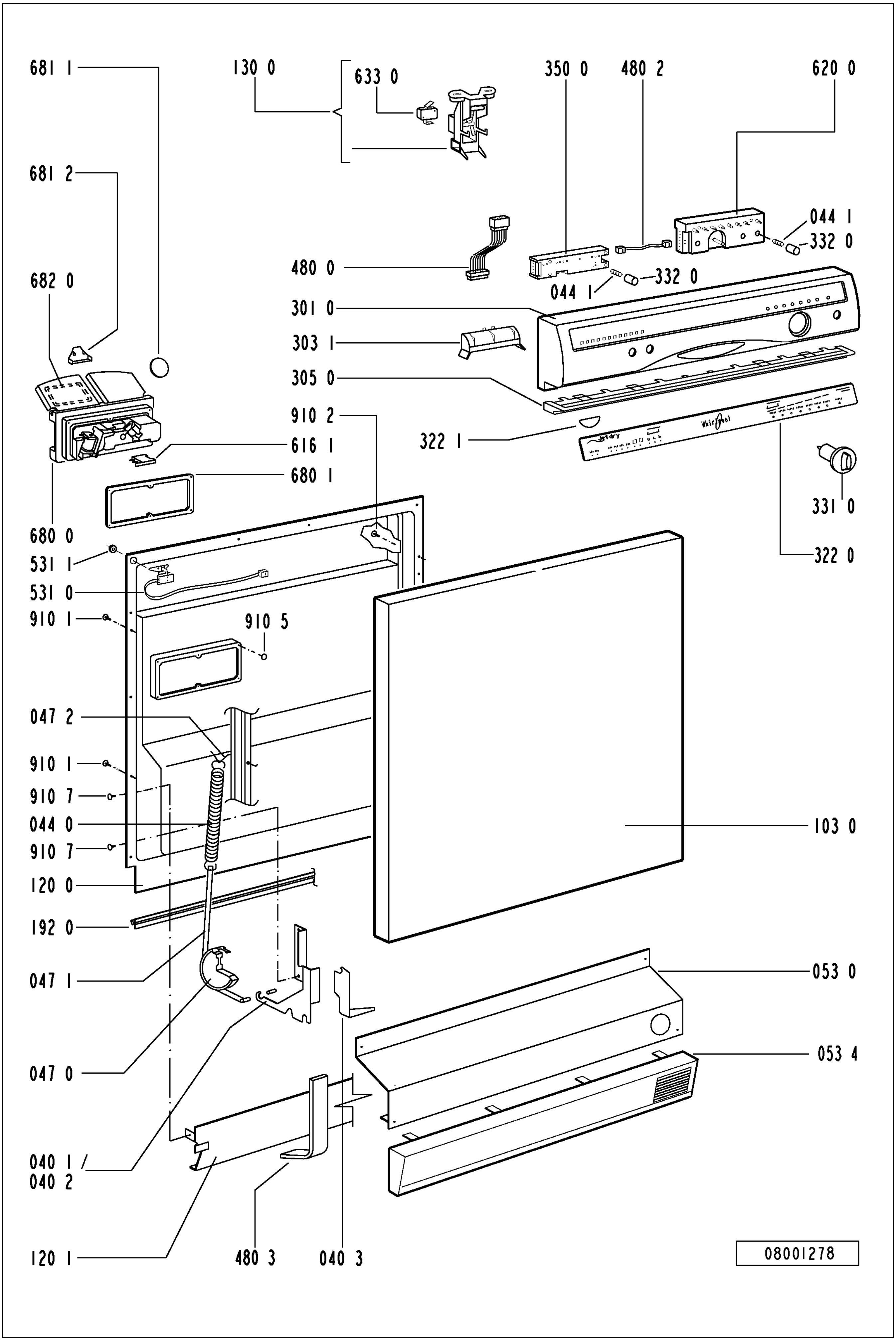
Pos. No.	12NC Code	Description
722 2	**4812 360 68056**	Hub upper straight cpl.
723 0	**4812 360 68049**	Spray arm ceiling
723 1	**4812 466 68483**	Gasket
723 2	**4812 404 48597**	Clip,fix spray arm
723 3	**4812 505 18362**	Screwed joint
726 0	**4812 530 28786**	Tube
726 1	**4812 530 28787**	Tube
726 2	**4812 505 18358**	Nut
726 3	**4812 466 68512**	Gasket
726 4	**4812 462 79633**	Centering
743 0	**4812 530 48134**	Air guide
743 1	**4812 530 28102**	Hose, inlet
743 2	**4812 440 19526**	Air guide lower
743 3	**4812 505 18364**	Nut
743 4	**4812 281 38001**	Valve disk
743 5	**4812 466 98934**	Disc
743 7	**4812 466 68514**	Gasket
751 0	**4812 418 18205**	Water collector
751 1	**4812 418 18203**	Water guide
751 2	**4812 440 19454**	Fastener frame
755 0	**4812 530 28849**	Bend
755 2	**4812 530 48148**	Tray,leak
756 0	**4812 360 58099**	Floater
761 0	**4812 480 58082**	Sieve fine
761 2	**4812 418 18204**	Cover sieve
762 0	**4812 480 58084**	Microfilter
763 0	**4812 480 58083**	Sieve coarse
781 0	**4812 530 28737**	Hose,draining
781 1	**4819 530 28286**	Sleeve hose
781 2	**4819 492 68405**	Clip f.non-return valve
781 3	**4812 281 28364**	Flap non-return
783 1	**4812 530 28806**	Hose connection
783 5	**4812 530 28851**	Distributor
783 6	**4812 530 28796**	Hose 10x3x180+10
791 0	**4812 532 68067**	Gasket
791 2	**4812 530 58093**	Gasket
791 4	**4812 466 68503**	Gasket
791 5	**4812 466 68504**	Gasket
794 1	**4819 530 58032**	Gasket 20x2,5
901 0	**4822 401 10492**	Clamp,hose 14-24 mm
901 1	**4812 401 18424**	Strap 050,0
901 2	**4812 401 18157**	Strap 32-50/9 C61
901 4	**4812 401 18405**	Strap 025,6-708Z
901 5	**4812 401 48573**	Strap 028,6
901 6	**4812 401 48574**	Strap 038,1
901 7	**4812 401 18427**	Strap 031,6
904 2	**4812 462 79657**	Cover BK 3,5x5
910 0	**4812 502 18398**	Screw,selftap ST4,2x9,5
910 1	**4812 502 18394**	Screw 3,5x14-H
910 2	**4812 502 18363**	Screw 4,0x12-H
910 3	**4812 502 18389**	Screw NIRO A2
910 4	**4812 502 18386**	Screw 3,5x8-TORX T15
910 5	**4812 502 18393**	Screw 3,5x9-1 Tx15
910 7	**4812 502 18397**	Screw INOX A2 M 5X12
964 0	**4812 466 68577**	Gasket housing ri/le

Pos. No.	12NC Code	Description
964 1	**4812 466 68576**	Gasket housing upper
993 0	**4812 530 48149**	Bow
993 5	**4822 532 80216**	Funnel salt

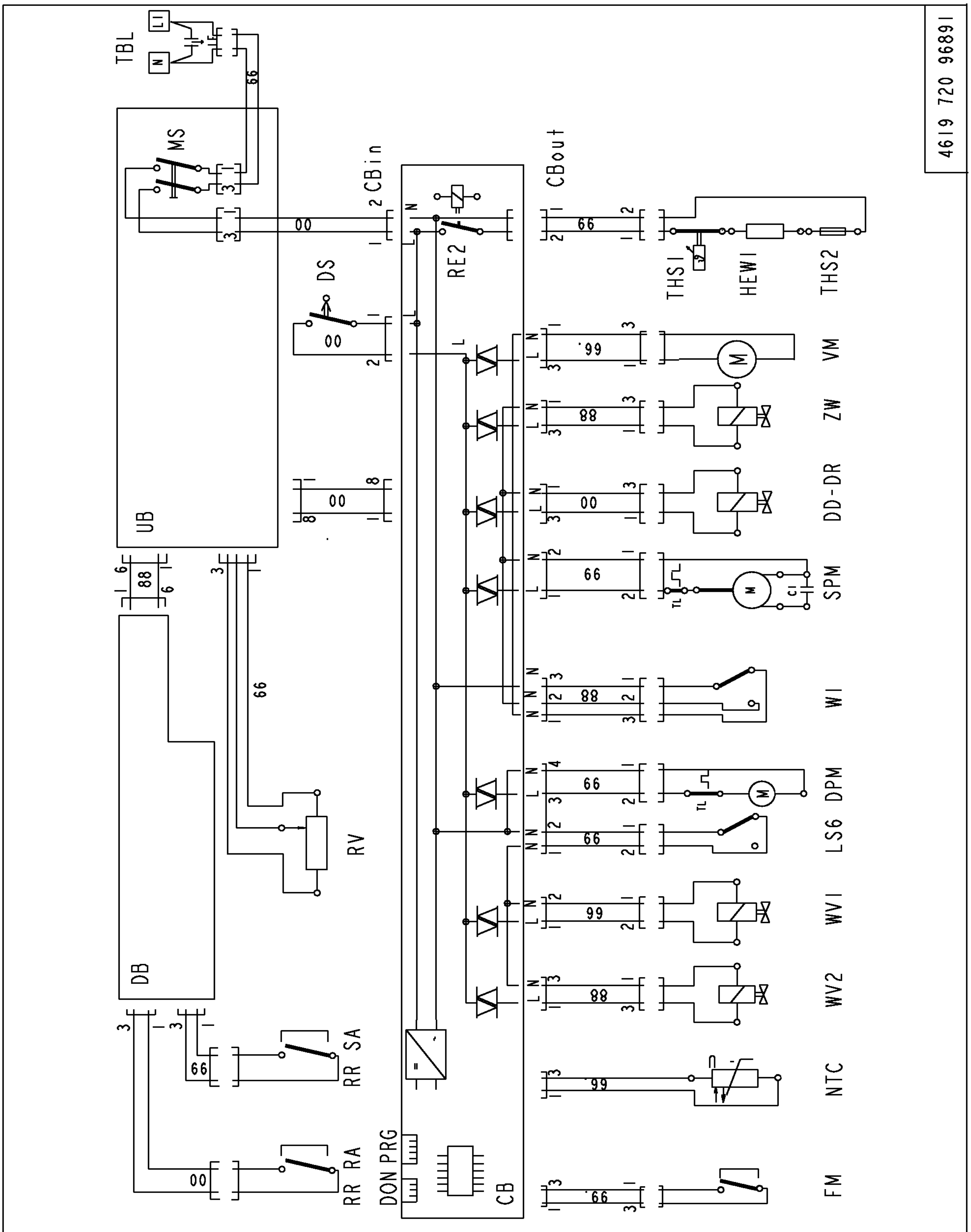
Exploded view



Exploded view



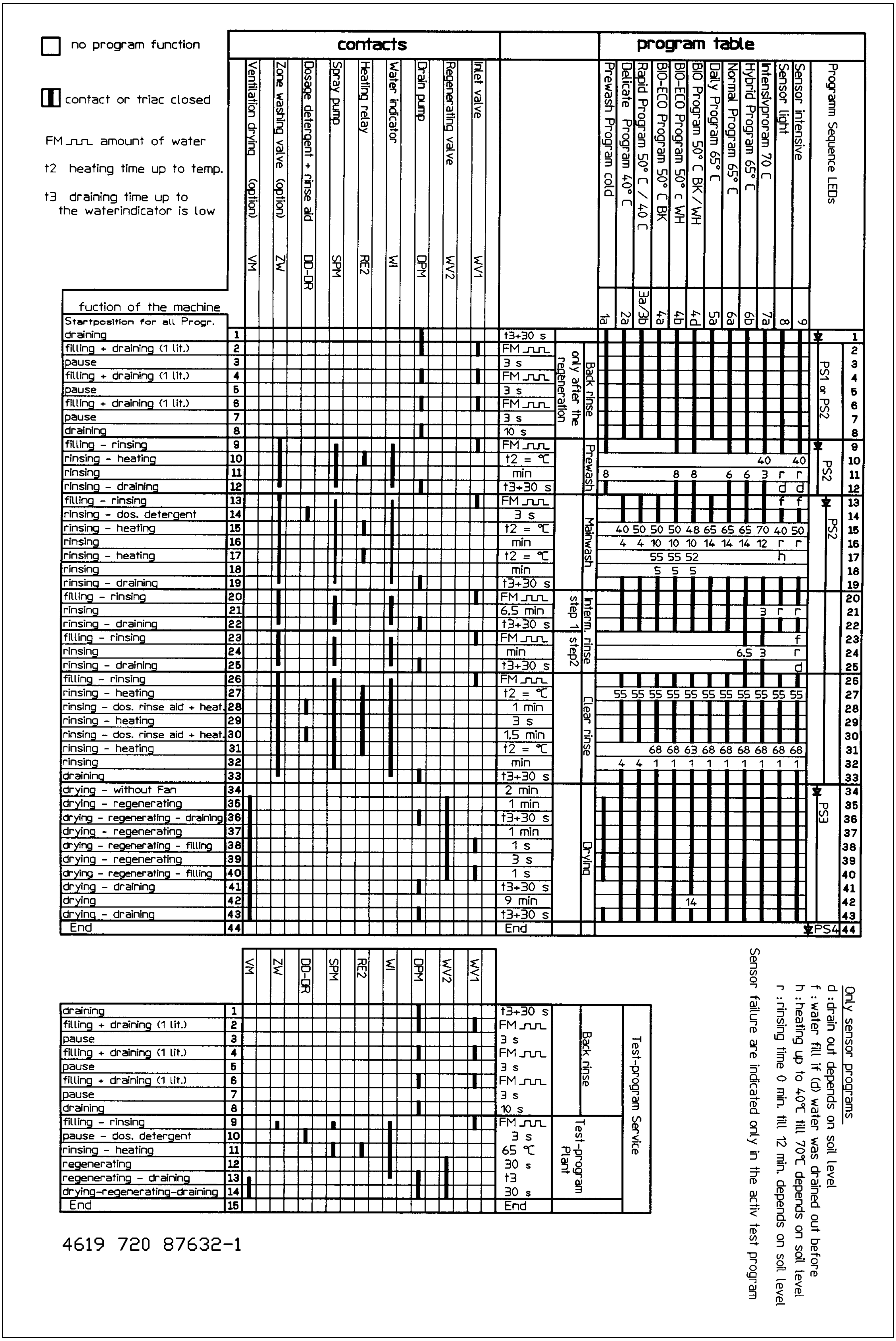
Circuit diagram



C1	Capacitor
CB	Control board
DB	Display board
DUB	Display- and User board
DLB	Timerswitch Delay
DPM	Drain pump motor
DD	Cleaning agent dosage
DON	Turbidity sensor
DR	Final rinse dosage
DS	Door switch
FM	Flow meter
HEWI	Heating
IF	Interference filter
LS6	Water leakage switch
L	Line
MS	Main switch
NTC	Thermostat temp. sensor
N	Neutral
PRG	Plug to program
RV	Water hardness switch
RE2	Heating relay
RR SA	Reed relay salt
RR RA	Reed relay rinsaid
SAB	Sprayarm blocked
SPM	Sprayarm motor
THS	Safety thermostat
THS 2	Fuse
TBL	Power supply terminal
TL	Winding protective contact
UB	User board
VM	Fan ventilator
WV1	Water inlet valve
WV2	Water regenerating valve
WI	Water indicator
ZW	Zone washing
00	black
66	blue
88	grey
99	white

Connector Rast 2.5 on CB:
red marked: left hand side
black marked: right hand side

Program diagram



Text/Legend

Test procedure for SERVICE-TEST-PROGRAM DOLPHIN dishwashers (Global)

1. Start the passive test program.
   If there is a defective component indicated, open the plinth and take out the control board (CB).

2. Check the component.
   Unplug the indicated component from the control board (CB) and check it by using an Ohm-measure equipment.
   If the ohms are not correct, check the cables to the component and check the component itself.

3. Check the control board (CB).

4. Only if there is no reaction when pushing a push button or turning the rotary switch, then test the control board (CB) and the user board (UB) with the test points.

5. At the end of the repair start the appliance and delete the stored failure. After this, start the test program again to see that the failure is solved.

More details: s. following pages.

Attention:

First unplug the appliance, then set the connection clamps of the volt measurement on the test points.
Danger for short circuit. Short circuits on components can damage the control board (CB).
If electronic boards are wet, do not switch the appliance on.
For check the appliance, plug in the appliance.
Failures, which occurred during the program will store and indicate by flashing start LED.
Then start the test program without erase the failure before. The failure will indicate.
To erase the failures, you must push the start button longer than 3 seconds.
The failures F1 NTC break
F2 water leakage
F9 continuous water inlet
are checked and indicated immediately after start of the program.
Therefore these failures have to be solved before starting the active test program.

When these failures are not solved, the active test program does not run.

The electrical components get their voltage via triac from the control board (CB). For testing the volume of voltage the volt meter must be parallel to the component (the component must be connected). If the component is disconnected, then the outcomed voltage from the control board (CB) is reduced.

For appliances with no program indicator or 7-segment-display you can use for testing a display board (DB) in addition. More details : see chapter active test program.

After starting a program this program is locked. That means neither by unplugging/switching of the appliance nor by setting an other program, the first setted program can be changed. Changing of the program is only possible by pushing the start button again for longer than 3 sec.. The programs end with draining out. After that start again.
On appliances with separate On-Off button the last used program is stored. That means if the customer wants to use the same program again he has only to press the On-button and the Start-button.

Attention: On new service control boards the first service test program is <u>without</u> back rinsing. <u>Dangerous for overfilling the appliance, in case the appliance is not empty</u>. By running the test program a second time the back rinsing will be carried out as usual.

4619 720 87721-1

Text/Legend

Handling of failures

F0 Sensor failure
Will not indicate for the customer. The programs will finish even there is a failure. The Failure is indicated only in the active test program after 10 – 30 second's. The active test program will finish as well, even there is a failure.
If the failure in a sensorprogram appear, the machine will always choose the highest consumption (best cleaning result).
- None or wrong output from the sensor
- Unlocical or unreal measurement results

Reason:
- Defective electronic of the sensor
- Optoelectronical parts in the sensor defect
- Case of the sensor is very dirty
- Connection between sensor and control board (CB) interrupted

Attention: The failure code will not store.

F1. NTC break
Temperature out of the normal value (-3°C till +85°C)
- temperature inside higher than +85°C
- NTC defective
- dishwasher is frozen, less than -3°C

Fill in the appliance a cup of warm water to warm it up before you start it, if the temperature is less than -3°C

F2. water leakage
- water is in the drip tray

floater (LS6) switches off the WV1 and the electronic switches on the DPM till WI reports empty

F3. heating system defective
Indicated after app. 11 minutes (1. check after 5 min., after that follow 2 more checks, before the failure is indicate)
- too less heating speed (lower 1,5 °C in 3 min.)
- heating (HEW) defective
- relays (RE2) on control board (CB) is defective
- NTC - resistance fluctuation
- water indicator (WI) defective (is switched off) - spray pump (SPM) is not working

F4. draining failure
drain pump starts and after 4 min. the WI detects not empty
- drain pump (DPM) defective
- siphon closed
- control board (CB) defective
- water indicator (WI) defective (is switched on)

F5. spray arm blocked (leads not to stop the appliance)
SAB sensor sends less than 10 impulses/min.
- spray arm blocked or not fixed well
- spray pump (SPM) does not work well
- SAB sensor defective

Text/Legend

F6. water tap closed (only indicated after start of the active test program)
water valve (WV1) is switched on but flow meter (FM) sends no impulses (less than 10 imp. in 10 sec.) and the water indicator (WI) is off (empty)
- water tap closed
- water inlet hose blocked
- water inlet valve (WV1) defective
- flow meter (FM) defective (leads to FM failure)

F7. flow meter failure
water inlet valve (WV1) is switched on and the water indicator (WI) is on (full).
- flow meter (FM) sends to less impulses (less than 10 imp. in 10 sec.)
- water tap closed
- water inlet hose blocked
- water inlet valve (WV1) defective
- flow meter (FM) defective

F8. water level failure
failure monitored during spray pump is on and the water indicator switches back more than 20 times in 2 min.
- water indicator defective (should switch on after app. 1 litre)
- sieve blocked
- water strongly foams
- pot has turned off and is filled with spray water
- no stable spray pump (SPM) working

F9. continuous water inlet
water inlet valve (WV1) is switched off, water indicator (WI) on, flow meter (FM) sends impulses (more than 10 imp. in 10 sec.)
- water inlet valve (WV1) mechanically not closed
- triac (CB) permanently switched on. (short circuit)

reaction: interval 30 sec. draining / 20 sec. tracing

For salt, rinse aid, zone wash valve, sieve valve failure see active test program.

Text/Legend

Appliances FAILURE AND ALARM DISPLAYING CODES

Alarm / Failure	Indication for customer		Indication whitin test program after a failure has occurred	
Sensor-break F 0	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ○		● ● ○ ○ PS1 PS2 PS3 PS4 START ○ (only indicated after start of the active t.p.)	
NTC-break F 1	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		● ○ ○ ○ PS1 PS2 PS3 PS4 START ○	
Water Leakage F 2	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		○ ● ○ ○ PS1 PS2 PS3 PS4 START ○	
Heating System Failure F 3	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		○ ○ ● ○ PS1 PS2 PS3 PS4 START ○	
Draining Failure F 4	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		○ ○ ○ ● PS1 PS2 PS3 PS4 START ○	
Spray Arm Blocked F 5	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ○		● ○ ○ ● PS1 PS2 PS3 PS4 START ○	
Water Tap Closed F 6	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		○ ● ○ ● PS1 PS2 PS3 PS4 START ○ (only indicated after start of the active t.p. Start LED flashed in passive t.p.)	
Flow Meter Failure F 7	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		○ ○ ● ● PS1 PS2 PS3 PS4 START ○	
Water Level Failure F 8	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		○ ● ● ○ PS1 PS2 PS3 PS4 START ○	
Water Continuously On F 9	○ ○ ○ ○ PS1 PS2 PS3 PS4 START ●		● ○ ● ○ PS1 PS2 PS3 PS4 START ○	

● **Led Flashing** **PS 1 till PS 4 : Program sequence LED**
○ **Led OFF**

Text/Legend

With the passive test program, you can check all LED's and buttons. If there is no failure the passive test program runs normal.

Attention:
If you can't start the active test program (Start button don't flash), normally there is one of the following failures detected: F1, F2 or F9

When these failures are not solved before, the active test program will not run. After solving the failure you must "sign" (erase) the failure.

Start procedure

Passive test program

The passive test program shows the stored failure. If there is no failure the passive test program runs normal.

Start
PS1 - PS4 flashes in rhythm.
Option LED lights (if chosen)
chosen program LED lights
Finish passive test program by starting active test program

1. Switch off the appliance
2. Push start button and hold it.
3. Choose position 1 of the turning knob turning right side (program 1).
4. Finish pushing the start button when the start LED flashes.
5. Failure indication.
6. Repair the failure
7. Solve the failure by pushing the start button for longer than 3 sec.
8. Start the passive test program again. If there is no failure detected, test all LED's and after that choose program 1.
9. Finish the passive test program by pushing the start button for shorter than 3 sec.

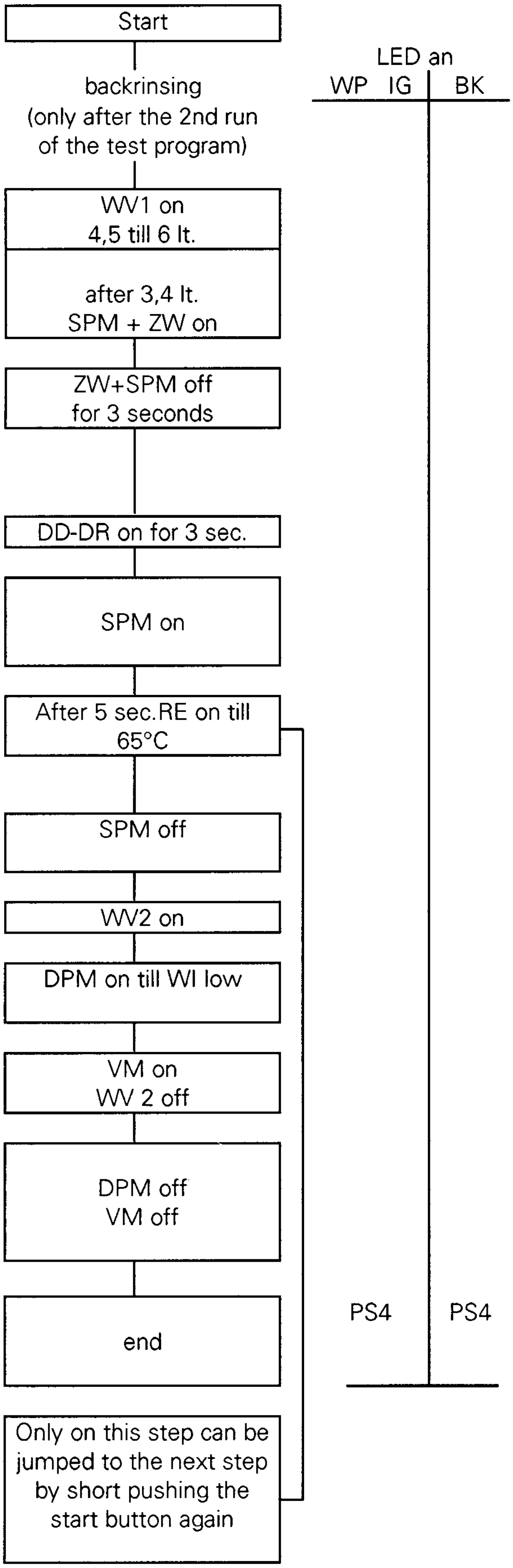
Active test program starts (see next page)

Program sequence LED

PS1	1. LED	prewash		
PS2	2. LED	mainwash		
		intermediate rinse final rinse		
PS3	3. LED	drying (regeneration)		
PS4	4. LED	end	goes off if any button is pushed	goes off after 30 min progr. is finished

Text/Legend

Active test program



Test procedure

1. Passive test program OK?
   no: repair failure, after that solve the failure and start the passive test program again.
   yes: push start button shorter than 3 second's
2. Active test program starts.

Remarks

The active test program runs to the failure position and stops or, if there is no failure, to the end.

To leave the test program push the start button for longer than 3 second's.

Too less salt or too less rinse aid leads not to the stop of the appliance.

The function of the zone wash valve can only be checked optically.
A defect leads to a not stable SPM pressure.

Appliances which have no program sequence or no 7-segment-display can't exactly show the failure. On these appliances the failure can only be found by starting the test program and following this by using the program chart or by connecting an additional kit 4819 310 39782 on the user board (UB) (connector DISPL).

When the failure position is reached the flashing start LED goes out.

Attention:
If you can't start the active test program (Start button don't flash), normally there is one of the following failures detected: F1, F2 or F9

When these failures are not solved before, the active test program will not run. After solving the failure you must "sign" (erase) the failure.

Remarks:
ZW on: zone wash valve on = no water on the upper sprayarm.
ZW off: zone wash valve off = water on the upper sprayarm.

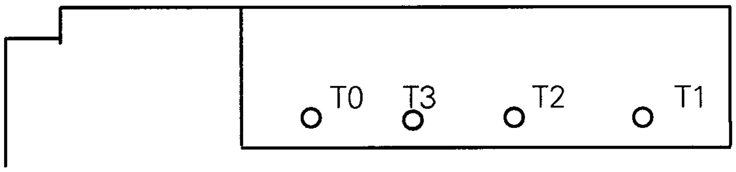
Text/Legend

Testpoints on the control board (CB)

With these test points the function of the buttons and the rotary switch can be checked.
The test points are in the service window on the control board.
For the test fine clamps, cables and volt meter with high input resistance are necessary.
Before setting the clamps on the test points, switch off the appliance.

Testpoints: T0: common line T2: analogue value
T1: analogue value T3: digital signal

Service window



Check: T0 to T1

Communication between control board (CB) and display board (DB) measured over user board (UB)

pushed button	voltage	from	to
no button pushed	ca. - 5.24 V DC	Control board (CB)	Display board (DB)
ZW (1 or 2 LED)	ca. - 3.43 V DC	Display board (DB)	Control board (CB)
Delay	ca. - 2.88 V DC	Display board (DB)	Control board (CB)
ZW + Delay start	ca. - 2.88 V DC	Display board (DB)	Control board (CB)

Check: T0 to T2

Communication between Control board (CB), User board (UB)

	voltage	from	to
Programplace 1	ca. - 1.32 V DC	User board (UB)	Control board (CB)
Programplace 2	ca. - 1.75 V DC	User board (UB)	Control board (CB)
Programplace 3	ca. - 2.20 V DC	User board (UB)	Control board (CB)
Programplace 4	ca. - 2.90 V DC	User board (UB)	Control board (CB)
Programplace 5	ca. - 3.36 V DC	User board (UB)	Control board (CB)
Programplace 6	ca. - 3.80 V DC	User board (UB)	Control board (CB)
Programplace 7	ca. - 4.27 V DC	User board (UB)	Control board (CB)
start button	ca. - 0.00 V DC	User board (UB)	Control board (CB)

Check: T0 to T3:

Communication between Control board (CB) and User board (UB). Check of the 'Start' function
Select any program.

before start (start LED off)	- 5.24 V DC
after start (start LED on)	- 3.87 V DC

How exact the data are, depends on the measure equipment.